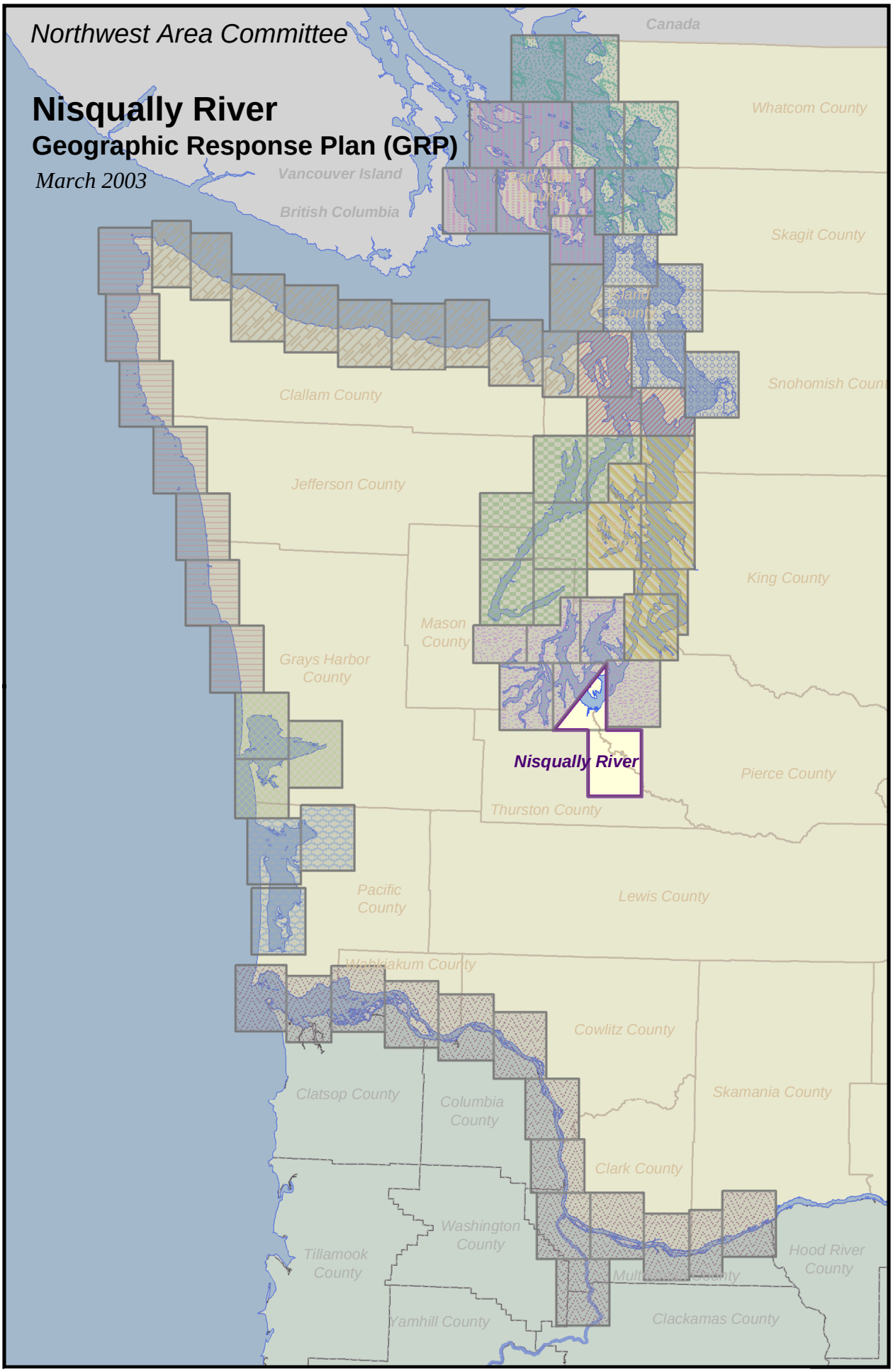


SPILL RESPONSE CONTACT SHEET

Required Notifications For Hazardous Substance or Oil Spills

USCG National Response Center ..... **(800) 424-8802**
In Oregon:
Department of Emergency Management ..... **(800) 452-0311**
In Washington:
Emergency Management Division ..... **(800) 258-5990**
Department of Ecology Northwest Regional Office ..... **(425) 649-7000**
Department of Ecology Southwest Regional Office ..... **(360) 407-6300**

U.S. Coast Guard

National Response Center	**(800) 424-8802**
Marine Safety Office Puget Sound:	
Watchstander	**(206) 217-6232**
Safety Office	(206) 217-6232
Marine Safety Office Portland:	
Watchstander	**(503) 240-9301**
Safety Office	(503) 240-9379
Pacific Strike Team	**(415) 883-3311**
District 13:	
MEP/drat	(206) 220-7210
Command Center	(206) 220-7001
Public Affairs	(206) 220-7237
Vessel Traffic Service (VTS)	**(206) 217-6050**

Environmental Protection Agency (EPA)

Region 10 Spill Response	**(206) 553-1263**
Washington Ops Office	(360) 753-9083
Oregon Ops Office	(503) 326-3250
Idaho Ops Office	(208) 334-1450
RCRA/ CERCLA Hotline	(800) 424-9346
Public Affairs	**(206) 553-1203**

National Oceanic Atmosphere Administration

Scientific Support Coordination	(206) 526-6829
Weather	(206) 526-6087

Canadian

Marine Emergency Ops/Vessel Traffic	(604) 666-6011
Environmental Protection	(604) 666-6100
B.C. Environment	(604) 356-7721

Department of Interior

Environmental Affairs	(503) 231-6157
	(503) 621-3682

U.S. Navy

Naval Shipyard	**(360) 476-3466**
Naval Base Seattle	(360) 315-5440
Supervisor of Salvage	**(202) 695-0231**

Army Corps of Engineers

Hazards to Navigation	(206) 764-3400

Nisqually Tribe

Tribal Office	(360) 456-5221
After Hours Emergencies	(360) 459-9603

Federal O.S.R.O./ State Approved Response Contractors

All Out Indust. & Env. Services	(360) 414-8655
Certified Cleaning Services, Inc.	(253) 536-5500
Clean Sound Cooperative, Inc.	**(425) 783-0908**
Cowlitz Clean Sweep, Inc.	(360) 423-6316
FOSS Environmental	**(800) 337-7455**
Global Diving and Salvage	(206) 623-0621
Guardian Industrial Services, Inc.	(253) 536-0455
MSRC	(425) 252-1300
National Response Corporation	(206) 340-2772

Washington State

Department of Ecology Headquarters	(360) 407-6900
Southwest Region	**(360) 407-6300**
Northwest Region	**(425) 649-7000**
Central Region	**(509) 575-2490**
Eastern Region	**(509) 456-2926**
Department of Fish and Wildlife	**(360) 534-8233**
Emergency Management Division	(360) 438-8639
	(800) 258-5990
State Patrol	
Bellevue	(425) 455-7700
Tacoma	(253) 536-6210
Bremerton	(360) 478-4646

Oregon State

Department of Environmental Quality	(503) 229-5733
Emergency Management	**(503) 378-6377**
	(800) 452-0311

HOW TO USE THIS GEOGRAPHIC RESPONSE PLAN

Purpose of Geographic Response Plan (GRP)

This plan prioritizes resources to be protected and allows for immediate and proper action. By using this plan, the first responders to a spill can avoid the initial confusion that generally accompanies any spill.

Geographic Response Plans are used during the emergent phase of a spill which lasts from the time a spill occurs until the Unified Command is operating and/or the spill has been contained and cleaned up. Generally this lasts no more than 24 hours. The GRPs constitute the federal on-scene coordinators' and state on-scene coordinators' (Incident Commanders) "orders" during the emergent phase of the spill. During the project phase, the GRP will continue to be used, and the planned operation for the day will be found in the Incident Action Plan's Assignment List (ICS Form 204). The Assignment List is prepared in the Planning Section with input from natural resource trustees, the Incident Objectives (ICS Form 202), Operations Planning Worksheet (ICS Form 215), and Operations Section Chief.

Strategy Selection

Chapter 4 contains complete strategy descriptions in matrix form, response priorities, and strategy maps. The strategies depicted in Chapter 4 should be implemented as soon as possible, following the priority table in Section 2. These strategy deployment priorities may be modified by the Incident Commander(s) after reviewing on scene information, including: tides, currents, weather conditions, oil type, initial trajectories, etc.

It is assumed that control and containment at the source is the number one priority of any response. If, in the responder's best judgment, this type of response is infeasible then the priorities laid out in Chapter 4, Section 2 take precedence over containment and control.

It is important to note that strategies rely on the spill trajectory. A booming strategy listed as a high priority would not necessarily be implemented if the spill trajectory and booming location did not warrant action in that area. However, the priority tables should be followed until spill trajectory information becomes available, and modifications to the priority tables must be approved by the Incident Commander(s).

The strategies discussed in this GRP have been designed for use with persistent oils and may not be suitable for other petroleum or hazardous substance products. For hazardous substance spills, refer to the Northwest Area Contingency Plan, Chapter 7000.

Standardized Response Language

In order to avoid confusion in response terminology, this GRP uses standard National Interagency Incident Management System, Incident Command System (NIIMS, ICS) terminology and strategy names, which are defined in Appendix A, Table A-1 (e.g. diversion, containment, exclusion).

Relationship to other GRPs

This GRP connects directly with the South Puget Sound GRP, which also should be consulted if the spill or any response actions will involve the Nisqually River estuary.

Nisqually River
Geographic Response Plan

Record of Changes

Date	**Change Number**	**Summary of Changes**	Initials of person making change
July 1, 1998	Final Release		N/A
March 2003	2nd Change	Update of Chapter 4 using GIS based maps.	D Davis

Table of Contents

Nisqually River, Washington

GEOGRAPHIC RESPONSE PLAN

1. INTRODUCTION: SCOPE OF THIS PROJECT

Geographic Response Plans are intended to help the first responders to a spill avoid the initial confusion that generally accompanies any spill. This document serves as the federal and state on-scene-coordinators "orders" during a spill in the area covered by this GRP (see Chapter 3 for area covered). As such, it has been approved by the U.S. Coast Guard Marine Safety Office and the Washington State Department of Ecology Spills Program. Changes to this document are expected as more testing is conducted through drills, site visits, and actual use in spill situations. To submit comments, corrections, or suggestions please refer to Appendix C.

GRPs have been developed for the marine and inland waters of Washington, Oregon, and Idaho. They are prepared through the efforts and cooperation of the Washington Department of Ecology, Washington Department of Fish and Wildlife, Oregon Department of Environmental Quality, Idaho State Emergency Response Commission, the U.S. Coast Guard, the Environmental Protection Agency, tribes, other state and federal agencies, response organizations, and local emergency responders. The Nisqually River GRP represents the first plan developed for a medium-sized river. The U.S. Army's Fort Lewis also played a pivotal role in its development.

GRPs were developed through workshops involving federal, state, and local oil spill emergency response experts, response contractors, and representatives from tribes, industry, ports, environmental organizations, and pilots. Workshop participants identified resources which require protection, developed operational strategies, and pinpointed logistical support. A similar process has been used for major updates.

Following the workshops, the data gathered was processed and reproduced in the form of maps and matrices which appear in Chapters 4 through 6. The maps for this GRP were generated using Arc/Info and ArcView while the matrices were created using Excel for Windows. The balance of each GRP was produced using MS Word.

The first goal of a GRP was to identify, with the assistance of the Washington State Natural Resource Damage Assessment Team, resources needing protection; response resources (boom, boat ramps, vessels, etc.) needed, site access and staging, tribal and local response community contacts, and local conditions (e.g. physical features, hydrology, currents and tides, winds and climate) that may affect response strategies. Note that GRPs only address protection of sensitive **public** resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marinas, private water intakes, and non-release aquaculture facilities).

Secondly, response strategies were developed based on the sensitive resources noted, hydrology, and climatic considerations. Individual response strategies identify the amount of boom necessary for implementation. The response strategies are then applied to Potential Spill Origins and trajectory modeling, and prioritized, taking into account factors such as resource sensitivity, feasibility, wind, and tidal conditions.

Draft strategy maps and matrices were sent out for review and consideration of strategy viability. Field verification was conducted for some strategies, and changes proposed by the participants were included in a semi-final draft, which was offered for final review to all interested parties and the participants of the field verification.

Finally, the general text of the GRP was compiled along with the site description, reference maps, and logistical support.

Items included in Logistical Support:

- Location of operations center for the central response organization;
- Local equipment and trained personnel;
- Local facilities and services and appropriate contacts for each;
- Site access & contacts;
- Staging areas;
- Helicopter and air support;
- Local experts;
- Volunteer organizations;
- Potential wildlife rehabilitation centers;
- Marinas, docks, piers, and boat ramps;
- Potential interim storage locations, permitting process;
- Damaged vessel safehavens;
- Vessel repairs & cleaning;
- Response times for bringing equipment in from other areas.

2. SITE DESCRIPTION

This plan covers the 44 mile reach of the Lower Nisqually River, starting at the Alder Dam and ending at Puget Sound (where the South Puget Sound GRP begins). The GRP is divided into 4 subregions: River Miles 22-18; River Miles 18-10; River Miles 10-4; and River Miles 4-0.

Refer to Chapter 6 for detailed resource information.

2.1. Physical Features

The Nisqually River originates from the Nisqually Glacier on Mt. Rainier and travels approximately 78 miles to its mouths at the Nisqually Delta. From its headwaters, the river flows about 26 miles to the eight-mile long Alder Reservoir formed by Tacoma City Light's Alder Dam. The Tacoma City Light LaGrande Dam lies 1.7 miles downstream. Below the LaGrande Dam, the river flows through deep canyon to the Mashel River confluence. At this point, the landscape begins to flatten and the river assumes a meandering pattern which it generally follows to its delta. The Centralia Powerhouse Diversion, which draws water at mile 26.2 and returns flow at mile 12.6, affect river flow over this 14 mile reach.

Shorelines within the 4 subregions of the Lower Nisqually River may include the following habitat types:

- Sand beaches
- Sand and gravel beaches
- Sand and cobble beaches
- Rocky shores
- Sheltered marshes

2.2. Hydrology

The Alder Dam, LaGrande Dam, and Centralia Powerhouse/Dam represent the primary hydropower influences on flow in the Nisqually River. Winter mean flow in the Nisqually River is approximately 2,200 cubic feet per second (cfs). Based on this flow, oil discharged below the LaGrande Dam will take approximately 6-8 hours to reach the Yelm area.

2.3. Currents and Tides

Tidal influence on the lower Nisqually River extends approximately 3.3 miles upstream to the Burlington Northern Railroad bridge near the town of Nisqually. The mean tidal range (MHW - MLW) for South Puget Sound is 9.4 to 10.48 feet. The diurnal tidal range (MHHW - MLLW) is 13.1 to 15.0 feet.

2.4. Winds

The winds in this area are a result of diverse topography including the Olympic and Cascade Mountains. Additional information may be available from the National Weather Service.

2.5. Climate

The lower reaches of the Nisqually River are influenced by south Puget Sound's maritime climate with cool summers and mild winters. Upstream, the climate is primarily influenced by Mount Rainier.

2.6. Risk Assessment

The lower Nisqually River faces oil spill risks from a diffuse variety of sources, including:

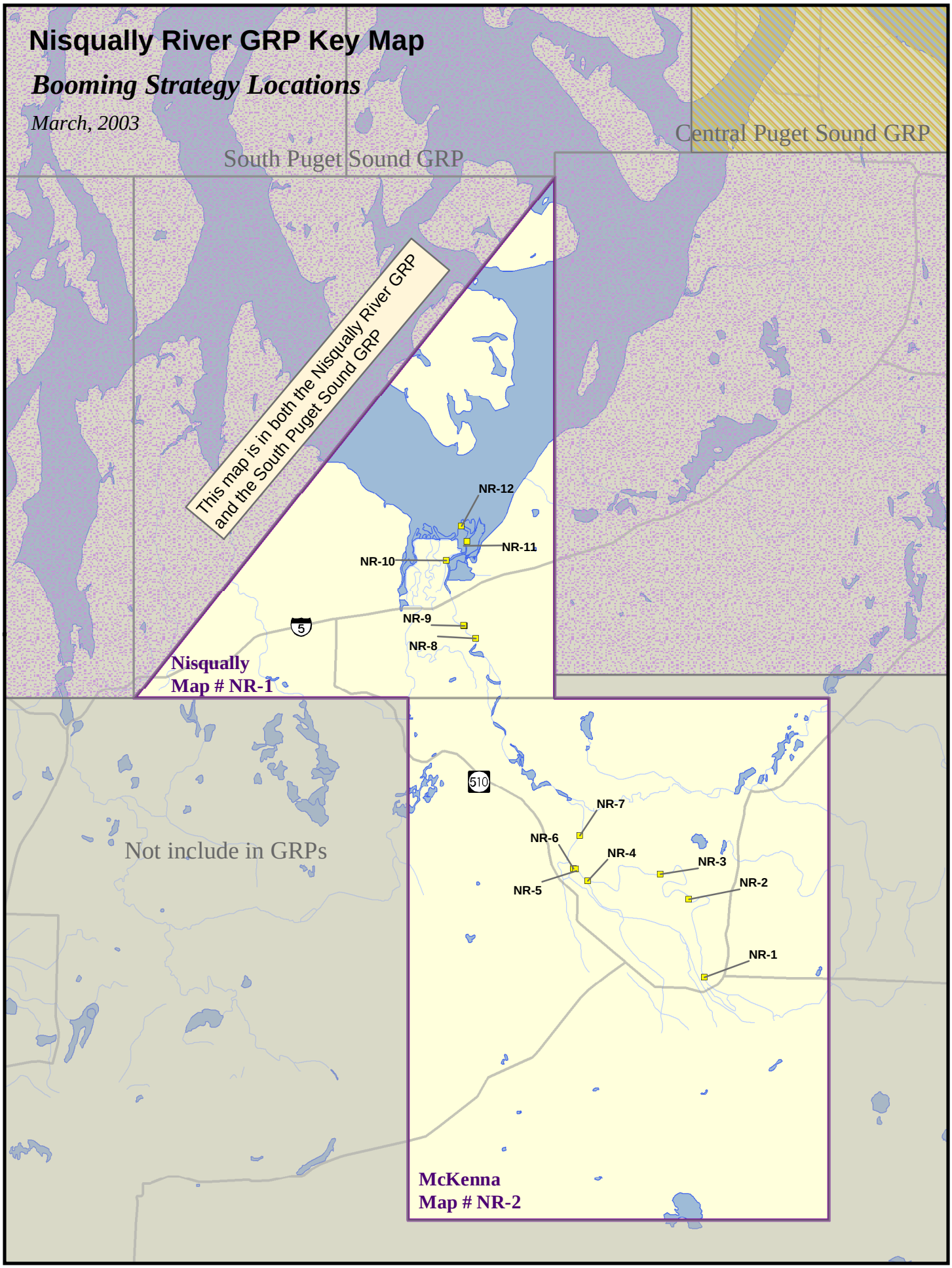
- Olympic Pipeline. This pipeline crosses the Nisqually River at approximately river mile 18.5, carrying gasoline, diesel, and jet fuel at pressures ranging from 600-800 pound per square inch. Manual block valves are located on both sides of the river crossing, with a total drainout capacity of approximately 29,000 gallons between these valves.

- U.S. Army/Fort Lewis: The Nisqually River borders or runs through Fort Lewis for approximately 16.5 miles. It separates the Rainier Training Area and southwest Fort Lewis from the rest of the reservation between river miles 11 and 12. To reach the Rainier Training Area, military units must cross the river either at the Nisqually River bridge or ford the river at the Tank Crossing Site. The U.S. Army conducts field training on Fort Lewis throughout the year. This training routinely involves transportation and field storage of fuel (predominately JP-8) and field refueling of vehicles and aircraft. A worst-case scenario spill would involve an accident on the bridge or at the tank crossing site involving a 7,500 gallon military tanker truck with JP-8 overturning and spilling the majority of its fuel into the river. The probability of such a spill is considered small, and no spills into the river from Army training have been recorded. However, with continued Army training activity, this potential remains.

- Train traffic: The Burlington Northern Santa Fe (BNSF) rail line crosses the Nisqually River at approximately river mile 19 and river mile 3.5. Locomotives hold several thousands of gallons of diesel fuel, and their risk of spilling was exemplified by a 3,000 gallon diesel spill from a BNSF train derailment into Puget Sound at Solo Point in 1996. Hazardous material spills from rail cars also presents a risk to the river, such as a past copper ore rail spill in the lower Nisqually River which killed 70,000 coho salmon/

- Other vehicle traffic: Commercial truck traffic on I-5, State Route 507, and local roads presents a risk of small - medium size fuel spills into the river.

- Due to tidal influence, a large spill in the Nisqually Reach area of Puget Sound could present a risk to upstream resources in the lower few miles of the river. Container and log ships, tugs, and other vessel traffic from Shelton and Olympia have the potential to spill significant amounts of fuel and other petroleum products that would affect the Nisqually delta.


Nisqually River GRP Key Map
Booming Strategy Locations
March, 2003
South Puget Sound GRP
Central Puget Sound GRP
This map is in both the Nisqually River GRP and the South Puget Sound GRP
NR-12
NR-11
NR-10
NR-9
NR-8
5
Nisqually
Map # NR-1
510
NR-7
NR-6
NR-4
NR-3
NR-2
NR-5
NR-1
Not include in GRPs
McKenna
Map # NR-2

4. GENERAL PROTECTION/COLLECTION STRATEGIES

4.1. Chapter Overview

This chapter details the specific response strategies and resources to protect as outlined by the participants of the GRP workshop for the lower Nisqually River. It describes the strategies determined for each area and the prioritization of those strategies. Note that GRPs only address protection of sensitive **public** resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marinas, private water intakes, and non-release aquaculture facilities).

Maps & Matrices

The maps in this chapter provide information on the specific location of strategy points. They are designed to help the responder visualize response strategies. Details of each booming strategy are listed in corresponding matrix tables. Each matrix indicates the exact location, intent and implementation of the strategy indicated on the map. The "Status" column describes whether the strategy has been visited or tested in the field, and the date of the visit/test.

Major Protection Techniques

All response strategies fall into one of three major techniques that may be utilized either individually or in combination. The strategies listed in 4.2 are based on the following techniques, and are explained in detail in Section 4.3:

Dispersants: Washington State Policy currently does not allow use of dispersants in this area. Certain chemicals break up slicks on the water. Dispersants can decrease the severity of a spill by speeding the dissipation of certain oil types. Their use will require approval of the Unified Command. Dispersants will only be used in offshore situations under certain conditions, until further determinations are made by the Area Committee and published in the Area Contingency Plan.

In Situ Burning: Approval to burn in this area is unlikely in the lower reach of the Nisqually River due to the populated areas in proximity to a potential burn site. Burning requires the authorization of the Unified Command, who determine conformance of a request to burn with the guidelines set forth in the Area Plan. This option is preferable to allowing a slick to reach the shore provided that population areas are not exposed to excessive smoke. Under the right atmospheric conditions, a burn can be safely conducted in relative close proximity to human population. This method works on many types of oil, and requires special equipment including a fire boom and ignitors.

Mechanical Recovery Strategies: If a spill is too close to shore to use In Situ burning or dispersants, the key strategies are to use collection, diversion, or exclusion booming to contain the slick and prevent it from entering areas with sensitive wildlife and fisheries resources. This will be attempted through the use of various booming strategies. These options are described in detail in Table A-1 in Appendix A. Specific skimming strategies are not listed in the maps and matrices, but skimming should be used whenever possible and is often the primary means of recovering oil and protecting resources, especially when booming is not possible or feasible.

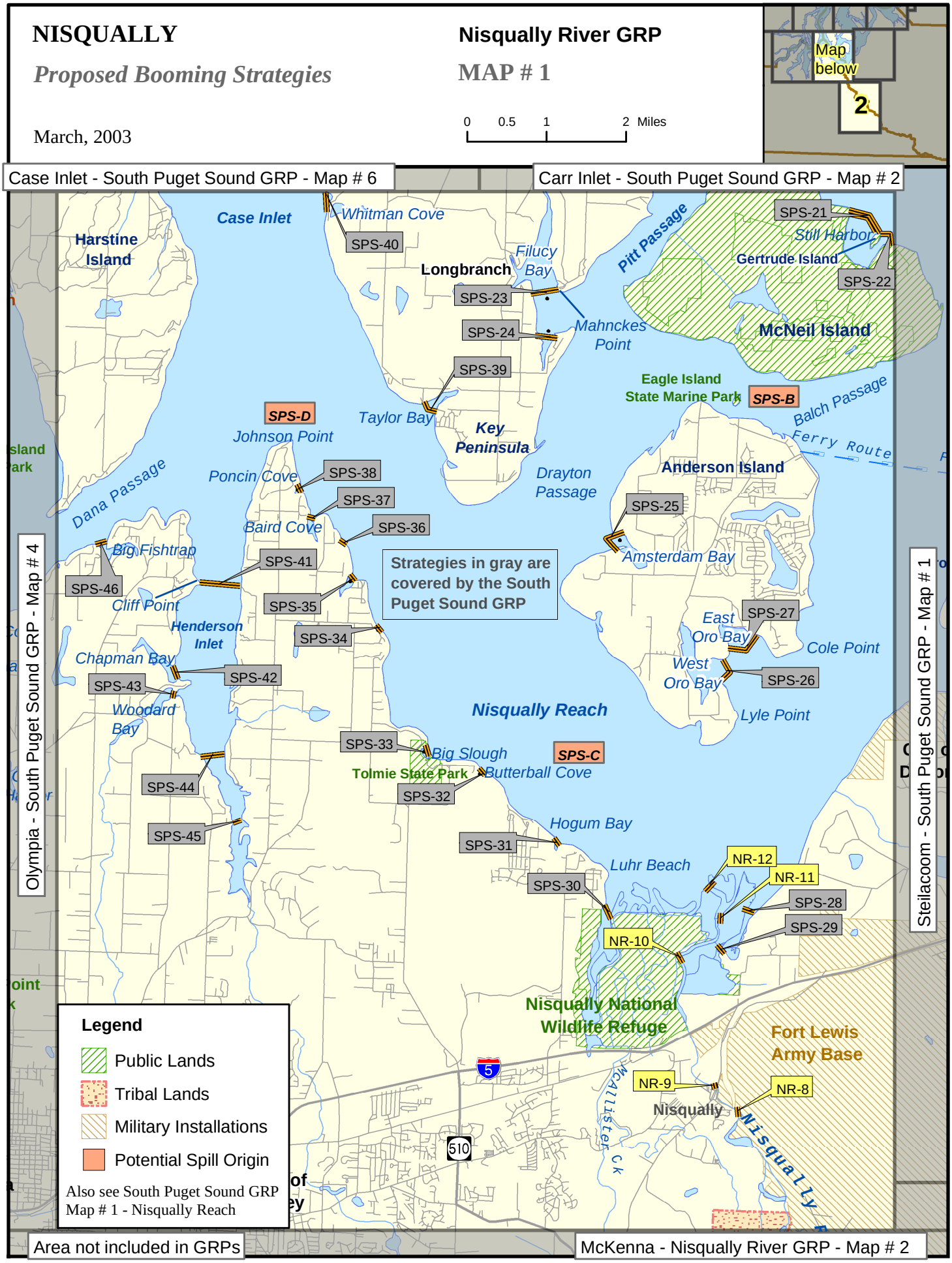
Priorities: The booming strategy priority table (Section 4.2.) was developed to protect the most sensitive resources on the river. This table was not developed using "Potential Spill Origins" as for other GRPs. The response strategies indicated in the priority matrices are explained in detail in the Maps & Matrices section (Section 4.3.). It is implied that control and containment at the source is the number one priority of any response. If in the responder's best judgment this is not feasible, then the priorities laid out in the priority table take precedence over containment and control.

4.2. Booming Strategy Priority Table

Priorities for the Nisqually River generally reflect the downstream movement of oil discharged into the river. Therefore, the first strategy downstream from the spilled oil that can be deployed before the oil arrives ranks higher in priority than strategies further downstream. However, the following table lists the top 5 strategies for the Nisqually River that rank highest in importance. **Note that these priorities may change at any time during a spill based on prevailing conditions and resource agency input:**

Intent is to protect downstream and particularly vulnerable resources SOURCE OF OIL: Upstream or midstream (e.g., truck or Olympic Pipeline)			
PRIORITY	STRATEGY NUMBER	MAP PAGE NUMBER	COMMENTS
BOOMING PRIORITIES			
1	NR-7	4-4	First priority in Olympic Pipeline Company contingency plan
2	NR-5	4-4	
3	NR-9	4-3	
4	NR-10	4-3	
5	NR-11	4-3	

4.3.1 Proposed Booming and Collection Strategies: Maps



MCKENNA

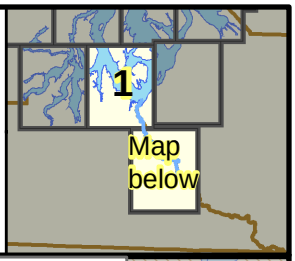
Proposed Booming Strategies

March, 2003

Nisqually River GRP

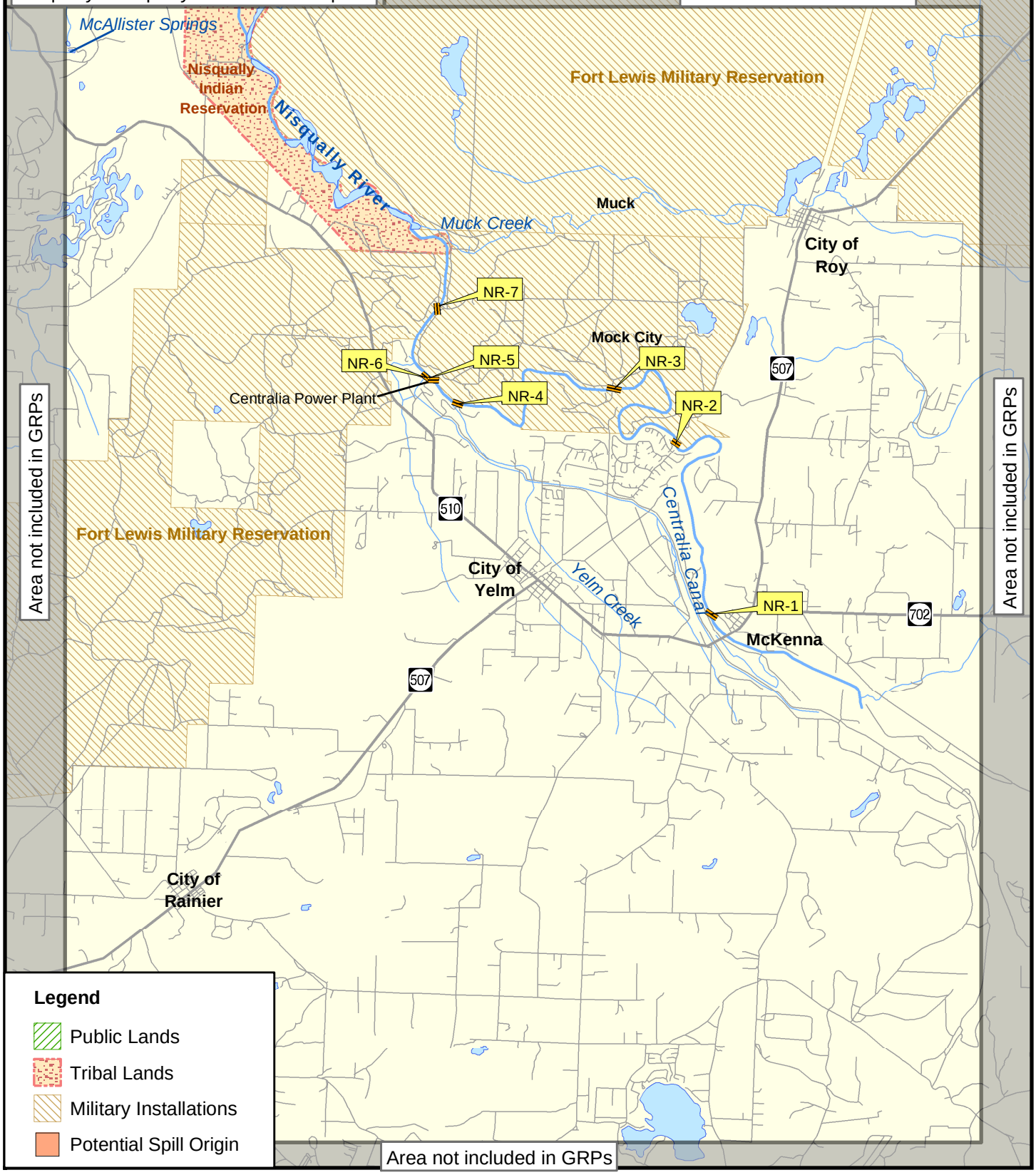
MAP # 2

0 0.5 1 2 Miles



Nisqually - Nisqually River GRP - Map # 1

Area not included in GRPs



Legend

- Public Lands
- Tribal Lands
- Military Installations
- Potential Spill Origin

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
NR-1		Milwaukee Railroad Bridge - McKenna (just below SR 507 bridge) - River Mile 21.5 46º-56.230'N 122º-33.785'W	Collection	300'	Angle deflection boom upstream to direct oil to northeast side of bridge. Collect with weir/disk skimmers; vac truck access.	McKenna	Road leads down to site off of SR 507.	Downstream resources. Note location of elder care facility just upstream in McKenna.
NR-2		Olympic Pipeline Crossing - River Mile 18.5 46º-57.900'N 122º-34.335'W	Pipeline shutdown; collection.	300'	If pipeline spill - close **manual** block valves located on both sides of crossing (700 barrel capacity in between). Collect at the site if possible.	Stage from residential streets to the south.	Poor - steep banks limit access to river; river flow also limits booming.	Downstream resources.
NR-3		"Recondo 2" - Ft. Lewis - River Mile 15.5 46º-58.460'N 122º-35.300'W	Potential Deflection/ Collection site.	300'	Good access and shallow water, but swiftest flow in lower river will likely make booming ineffective.	Large broad area adjacent to river for parking, staging.	Road access on both sides. 3 rope bridge provides anchorage on both banks.	Downstream resources.
NR-4		Mouth of Yelm Creek - River Mile 13 46º-58.260'N 122º-37.585'W	Exclusion	100'	Exclude from mouth of creek (or deflect if flow too great).	Private property/ agricultural land.	Private property/ agricultural land; by small boat.	Salmonid concentrations and habitat.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
NR-5		Centralia Power Plant - River Mile 12.5 46º-58.515'N 122º-37.980'W	Collection	200'	Deploy deflection boom just upstream of canal to direct into collection point at shore. *Note - if acceptable to power plant, could instead deploy boom just downstream of canal to deflect into canal for collection.*	Centralia Power Plant (boat and some response equipment on-site).	Centralia Power Plant; boat.	Power plant intake; downstream resources.
NR-6		Centralia Power Plant - River Mile 12.5 46º-58.520'N 122º-38.055'W	Exclusion (and possible collection) - Coordinate with SNR-5.	100'	Close off mouth of intake canal to protect if spill on outside or contain spill from plant.	Centralia Power Plant (boat and some response equipment on-site).	Centralia Power Plant; boat.	Power plant intake; downstream resources.
NR-7		Nisqually Tank Crossing - River Mile 11.8 46º-59.260'N 122º-37.875'W	Deflection/ Collection.	700'	Angle from current west bridge abuttment to upstream old east abuttment. Collect at current west abuttment.	On road on west side of bridge. Note that Olympic Pipeline Company has boom for this site in Olympia and Tacoma.	Road access - note that cell phones do not work at this site.	Downstream resources (high value salmonid spawning area below this site).
NR-8		Burlington Northern Railroad Bridge - River Mile 4 47º-03.500'N 122º-41.370'W	Deflection/ Collection.	500'	Angle from north trestle upstream towards handicapped-access fishing site. Collect with vac trucks/ skimmers.	Town of Nisqually.	Road access.	Downstream resources. Note that tidal influence begins here.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
NR-9		Mounts Road Bridge - River Mile 3.5 47º-03.745'N 122º-41.725'W	Deflection/ Collection.	1200'	Deploy 3 lengths of boom, 400' each, just downstream of bridge. Deploy vac truck on north bank to collect oil.	North bank just downstream of bridge; apartment parking on south bank just downstream of bridge; Ft. Lewis Golf Course.	Mounts Road - gravel roads on north bank (suitable for smaller trucks) lead to river.	Downstream resources.
NR-10		Nisqually Wildlife Refuge - River Mile 2 47º-05.160'N 122º-42.400'W	Collection	400'	Deploy boom to direct oil to the west side of the river where there is access from the dike road to recover the oil with portable disk/weir skimmers and vac trucks.	Nisqually Wildlife Refuge.	Truck-accessible roads on the dikes.	Nisqually Wildlife Refuge; estuary resources.
NR-11		Judson Slough - River Mile 0.5 47º-05.585'N 122º-41.720'W	Exclusion - Keep oil out of Red Salmon Creek slough.	200'	Deploy two parallel lengths of boom 100' each to close off Judson Slough.	Nisqually Wildlife Refuge.	Boat launch at Luhr Beach, or Frank's Landing upstream.	Red Salmon Creek.
NR-12		Mouth of Nisqually River - River Mile 0 47º-06.000'N 122º-42.000'W	Enhanced Skimming.	400'	Enhanced skimming at mouth of Nisqually River.		Boat launch at Luhr Beach, or Frank's Landing upstream.	Nisqually Wildlife Refuge; estuary resources.

APPENDICES

Appendix A: Summary of Protection Techniques

Protection Techniques	Description	Primary Logistical Requirements	Limitations
ONSHORE			
Beach Berms	A berm is constructed along the top of the mid-inter tidal zone from sediments ex-cavated along the downgradient side. The berm should be covered with plastic or geo-textile sheeting to minimize wave erosion.	• Bulldozer/Motor grader -1 • Personnel - equipment operator & 1 worker • Misc. - plastic or geotextile sheeting	• High wave energy • Large tidal range • Strong along shore currents
Geotextiles	A roll of geotextile, plastic sheeting, or other impermeable material is spread along the bottom of the supra-tidal zone & fastened to the underlying logs or stakes placed in the ground.	• Geotextile - 3 m wide rolls • Personnel - 5 • Misc. - stakes or tie-down cord	• Low sloped shoreline • High spring tides • Large storms
Sorbent Barriers	A barrier is constructed by installing two parallel lines of stakes across a channel, fastening wire mesh to the stakes & filling the space between with loose sorbents.	Per 30 meters of barrier • Wire mesh - 70 m x 2 m • Stakes - 20 • Sorbents - 30 m^2 • Personnel - 2 • Misc. - fasteners, support lines, additional stakes, etc.	• Waves > 25 cm • Currents > 0.5 m/s • Tidal range > 2 m
Inlet Dams	A dam is constructed across the channel using local soil or beach sediments to exclude oil from entering channel.	• Loader - 1 • Personnel - equipment operator & 1 worker or several workers w/shovels	• Waves > 25 cm • Tidal range exceeding dam height • Freshwater outflow

NEARSHORE			
Containment Booming	Boom is deployed in a "U" shape in front of the oncoming slick. The ends of the booms are anchored by work boats or drogues. The oil is contained within the "U" & prevented from reaching the shore.	For 150 meters Slick: • Boom - 280 m • Boats - 2 • Personnel - boat crews & 4 boom tenders • Misc. - tow lines, drogues, connectors, etc.	• High winds • Swells > 2 m • Breaking waves > 50 cm • Currents > 1.0 m/s
Exclusion Booming	Boom is deployed across or around sensitive areas & anchored in place. Approaching oil is deflected or contained by boom.	Per 300 meters of Boom • Boats - 1 • Personnel - boat crew & 3 boom tenders • Misc.- 6 anchors, anchor line, buoys, etc.	• Currents > 0.5 m/s • Breaking waves > 50 cm • Water depth > 20 m
Deflection Booming	Boom is deployed from the shoreline away from the approaching slick & anchored or held in place with a work boat. Oil is deflected away from shoreline.	Single Boom, 0.75 m/s knot current • Boom - 60 m • Boats - 1 • Personnel - boat crew + 3 • Misc. - 3 anchors, line, buoys, recovery unit	• Currents > 1.0 m/s • Breaking waves > 50 cm
Diversion Booming	Boom is deployed from the shoreline at an angle towards the approaching slick & anchored or held in place with a work boat. Oil is diverted towards the shoreline for recovery.	Single Boom, 0.75 m/s knot current • Boom - 60 m • boats - 1 • Personnel - boat crew + 3 • Misc. - 3 anchors, line, buoys, recovery unit	• Currents > 1.0 m/s • Breaking waves > 50 cm
Skimming	Self-propelled skimmers work back & forth along the leading edge of a windrow to recover the oil. Booms may be deployed from the front of a skimmer in a "V" configuration to increase sweep width. Portable skimmers are placed within containment booms in the area of heaviest oil concentration.	Self-propelled (None) Towed • Boom - 200 m • Boats - 2 • Personnel - boat crews & 4 boom tenders • Misc. - tow lines, bridles, connectors, etc. Portable • Hoses - 30 m discharge • Oil storage - 2000 liters	• High winds • Swells > 2 m • Breaking waves > 50 cm • Currents > 1.0 m/s

Appendix B: Original Geographic Response Plan Contributors

Industry and Response Contractors
Bill Mulkey, Olympic Pipeline Company
Marty Pederson, Clean Sound Cooperative

Local Representatives
Frank Hamilton, Thurston County DEM
Bill Lokey, Pacific County DEM

Tribal Representatives
George Walter, Nisqually Indian Tribe

State Representatives - Washington

Washington State Department of Ecology
Paul Heimowitz
Dick Logan
Dave Lundstrom
Jim Oberlander

Washington Department of Fish & Wildlife
Karin Divens
Jeff Skriletz

Washington Parks & Recreation Commission
Steve McBea

Federal Representatives

U.S. Army/Fort Lewis
Jess Brown
Phil Crawford
Scott Freeman
Teresa Hansen
Dave Hodgeboom
Randy Hohn
James Kane
Matt Knox
Ian Larson
Ken Smith
Paul Steucke

U.S. Coast Guard
James Borders
Dale Light

U.S. Fish and Wildlife Service
Louise Vicencio
Denise Baker

Appendix C: Geographic Response Plan Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors, please notify one of the following agencies: or use tear out sheet (page C-3)

- Washington Department of Ecology, SPPR program, Natural Resources Unit
- USCG Marine Safety Office Puget Sound, Planning Department
- USCG Marine Safety Office Portland
- Oregon Department of Environmental Quality
- Idaho Emergency Response Commission
- Environmental Protection Agency Region 10

Phone Numbers:

Washington DOE	(360) 407-6972
USCG MSO Puget Sound	(206) 217-6213
USCG MSO Portland	(503) 240-9307
Oregon DEQ	(503) 229-5774
Idaho ERC	(208) 334-3263
EPA	(206) 553-6901

Bulletin Board System (BBS):

USCG MSO Puget Sound	(206) 217-6216
USCG MSO Portland	(503) 240-9308

Internet/E-mail Address:

WADOE	dald461@ecy.wa.gov
OR DEQ	WYLIE.Jack@deq.state.or.us
USCG MSO Puget Sound	jlehto@pacnorwest.uscg.mil
USCG MSO Portland	mwilcox@pacnorwest.uscg.mil
USEPA	sheldrake.beth@epamail.epa.gov

Address:

Commanding Officer
United States Coast Guard
MSO Puget Sound
Planning Department
1519 Alaskan Way South
Seattle, WA 98134-1192

Commanding Officer
United States Coast Guard
Planning Department
MSO Portland
6767 North Basin Ave
Portland, OR 97217-3992

Washington Department Of Ecology
SPPR Program
Natural Resources Unit
P.O. Box 47600
Olympia, WA 98504-7600

Oregon Department of Environmental Quality
Water Quality Division
811 SW Sixth Avenue
Portland, OR 97204

Office Of The Governor
Idaho Emergency Response Commission
1109 Main
Statehouse
Boise, ID 83720-7000

Environmental Protection Agency
Emergency Response Branch
1200 Sixth Avenue
Seattle, WA 98101

Geographic Response Plan

Comments/Corrections/Suggestions

Directions:
Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make comments in the space provided. Add extra sheets as necessary. Submit to:

Dale Davis
Department of Ecology
Spills Program
300 Desmond Drive
P.O. Box 47600
Olympia, WA 98504-7600
dald461@ecy.wa.gov

Name: _____ Title:_____ Agency:_____

Address:_____

City: _____ State/Province:_____ Zip/Postal Code:_____

Phone: (____) _____ E-Mail:_____

GRP:_____Page Number:_____

Location on page (chapter, section, paragraph) (e.g. 2.1, paragraph 3):_____

Comments:_____

Northwest Area Committee
c/o Washington Department of Ecology
Spills Program
Natural Resources Unit - GRP Corrections
P.O. Box 47600
Olympia, WA 98504-7600